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## **Číslo 4**



### **PROTECTION OF HUMAN IN THE WORKING ENVIRONMENT**

**Alison D. MacEachern, Divya Jindal-Snape, Sharon Jackson. *Child Abuse Investigation : Police Officers and Secondary Traumatic Stress. S. 329-339.***

Child protection is an area of police work which has expanded in the last decade, leading to an increase in the number of police officers working in departments which specialise in investigating cases of child abuse. Police officers in this field may be at greater risk of experiencing secondary traumatic stress but there remains a paucity of research in this area of policing. Analogies can be drawn to existing research in policing and with social service workers involved in child protection. The paper finishes off with implications for police forces to ensure safe working environments and appropriate counselling for employees.

**Reetta Orsila, Tiina Luukkaala, Marja-Liisa Manka, Clas-Håkan Nygård. *A New Approach to Measuring Work-Related Well-Being. S. 341-359.***

The main aim of this study was to develop a short questionnaire to assess work-related well-being from the organizational behaviour perspective. The short well-being questionnaire enables measuring longitudinal work-related well-being. Work-related well-being was assessed with a 147-item questionnaire covering both organizational and intrinsic factors of work-related well-being. The questionnaire consisted of 27 categories. The respondents were 114 women (65%) and 62 men (35%), mean age 39.2 years, in various occupations. From the extensive questionnaire a shorter questionnaire with 33 items was developed by principal component analysis. The Kaiser-Meyer-Olkin measure to test the sampling adequacy of 27 factor solutions varied from .62 to .91 and Cronbach's  $\alpha$  was .74-.94. Most  $\kappa$  values of the shorter questionnaire were .50-.94 ( $p < .001$ ). The reliability of the short version was comparable to that of the original questionnaire. The short one could also be suitable for Internet and mobile questionnaire applications.

**Leena Korpinen, Rauno Pääkkönen. *Physical Symptoms in Young Adults and Their Use of Different Computers and Mobile Phones. S. 361-371.***

This paper presents the use of new technical equipment by young adults (30 years old or younger), and the physical symptoms they have. The paper then analyses how the symptoms are associated with the use of computers and mobile phones, taking into account the background information. The study is based on a survey of 15 000 working-age (18–65) Finns. The responses (1563) covering young adults' physical symptoms were analysed. Altogether 53.3% of all young adults had pretty often or more frequently pain, numbness or aches in the neck and 32.2% had aches in the hip and lower back. Women experienced more pain, numbness or aches in the neck (65.0%) than men (34.5%). The use of different computers at leisure quite often had an association with some symptoms in different parts of the body. In addition, exhaustion at work had associations with some physical symptoms. In the future, it is essential to note ergonomic reasons and exhaustion at work when young adults experience pain, numbness or aches.

**Hilma Raimona Zadry, Siti Zawiah Md Dawal, Zahari Taha. *The Relation Between Upper Limb Muscle and Brain Activity in Two Precision Levels of Repetitive Light Tasks*. S. 373-384.**

A study was conducted to investigate the effects of repetitive light tasks of low and high precision on upper limb muscles and brain activities. Surface electromyography (EMG) and electroencephalography (EEG) were used to measure the muscle and brain activity of 10 subjects. The results show that the root-mean-square (RMS) and mean power frequency (MPF) of the muscle activity and the mean power of the EEG alpha bands were higher on the high-precision task than on the low-precision one. There was also a high and significant correlation between upper limb muscle and brain activity during the tasks. The longer the time and the more precise the task, the more the subjects become fatigued both physically and mentally. Thus, these results could be potentially useful in managing fatigue, especially fatigue related to muscle and mental workload.

## **PROTECTION OF HUMAN AT THE WORKSTATION**

**Serpil Aytac, Veysel Bozkurt, Nuran Bayram, Selver Yildiz, Mustafa Aytac, Fusun Sokullu Akinci, Nazan Bilgel. *Workplace Violence: A Study of Turkish Workers*. S. 385-402.**

This research was conducted to address the experience of workplace violence of Turkish workers from different sectors and to investigate the impact of the exposed violence on their psychological well-being. Data were collected anonymously with printed questionnaires from the volunteer participants and depended on self-reporting. The response rate was 79.0% (1708/2161). The prevalence of workplace violence was found to be 44.8%. The most common type was verbal violence together with mobbing (bullying). Victims of physical violence were mostly males, whereas females were found to be victims of verbal, psychological and sexual violence. Most cases did not result in legal action and the victims remained silent. Psychological well-being of exposed workers in terms of depression, anxiety and stress seemed to deteriorate. Workplace violence remains a silent epidemic in Turkey. Preventive measures against workplace violence and social support for violated workers do not exist.

**Krystyna Zużewicz, Antoni Saulewicz, Maria Konarska, Zbigniew Kaczorowski. *Heart Rate Variability and Motion Sickness During Forklift Simulator Driving*. S. 403-410.**

The goal of the study was to determine the effect of a 1-h hour long forklift truck virtual simulator driving on the mechanism of autonomic heart rate (HR) regulation in operators. The participants were divided into 2 subgroups: subjects with no definite inclination to motion sickness (group A) and subjects with a definite inclination to motion sickness

(group B). Holter monitoring of electrocardiogram (ECG) signal was carried out in all subjects during the virtual simulator driving. For 12 consecutive epochs of ECG signal, HR variability analysis was conducted in time and frequency domains. In subjects with a definite inclination to motion sickness after ~30 min of the driving, changes in parameter values were found indicating an increase in sympathetic and parasympathetic activity with parasympathetic dominance.

**Detlef Mewes, Olaf Mewes, Peter Herbst. *Impact Resistance of Guards on Grinding Machines*. S. 411-421.**

Guards on machine tools are meant to protect persons from injuries caused by parts ejected with high kinetic energy from the machine's working zone. With respect to stationary grinding machines, Standard No. EN 13218:2002, therefore, specifies minimum wall thicknesses for guards. These values are mainly based on estimations and experience instead of systematic experimental investigations. This paper shows to what extent simple impact tests with standardizable projectiles can be used as basis for the evaluation of the impact resistance of guards, provided that not only the kinetic energy of the projectiles used but also, among others, their geometry corresponds to the abrasive product fragments to be expected.

**Anna Groborz, Tomasz Tokarski, Danuta Roman-Liu. *Analysis of Postural Load During Tasks Related to Milking Cows : a Case Study*. S. 423-432.**

The aim of this study was to analyse postural load during tasks related to milking cows of 2 farmers on 2 different farms (one with a manual milk transport system, the other with a fully automated milk transport system) as a case study. The participants were full-time farmers, they were both healthy and experienced in their job. The Ovako Working Posture Analyzing System (OWAS) was used to evaluate postural load and postural risk. Postural load was medium for the farmer on the farm with a manual milk transport system and high for the farmer working on the farm with a fully automated milk transport system. Thus, it can be concluded that a higher level of farm mechanization not always mean that the farmer's postural load is lower, but limitation of OWAS should be considered.

**Ingegerd Skoglund-Öhman, Katarina Kjellberg. *Factors That Influence the Use of Safe Patient Transfer Technique in Home Care Service*. S. 433-444.**

The aim of this pilot study was to explore whether home care service personnel used knowledge and skills in transfer technique in their daily work; knowledge and skills gained by participating in training programmes, and to identify factors that may hinder and support their use. Focus group interviews were held with 2 home care service groups in 2 Swedish towns. Individual interviews were conducted with the personnel's managers, unit leaders and safety representatives. Qualitative content analysis was used. The findings revealed that the personnel tried to use their knowledge and skills. However, there were both hindering and supporting factors for the use of safe work technique. The findings indicate that training programmes in transfer technique should not be implemented as isolated actions without considering the physical environment, the wishes of persons receiving care and their relatives, the work organisation, the safety culture and the role of managers.

**Jinky Leilanie D.P. Lu. *Occupational Safety of Farmers in the Vegetable Industry*. S. 445-453.**

This study aimed to determine unsafe farming practices, nonergonomically designed equipment, and possible adverse health effects of pesticide exposure. Data were

gathered with a structured survey, physical examination and blood extraction. Environmental monitoring was done for vegetables to determine multipesticide residue. Forty-eight percent of respondents reported feeling sick because of work. Vegetable residue was found in 16.67% of the samples. Vegetable profenofos of ~1 mg exceeded the necessary average daily intake of a maximum of 0.006 mg. Data also showed nonergonomically designed tools and unsafe work practices that increased pesticide exposure such as re-entering recently sprayed areas, a damaged backpack sprayer, spills during spraying, and no ventilation in greenhouses.

## NOTES

### **A. Ruhi Toraman, Fatma Battal, Kirstin Ozturk, Betul Akcin. *Sharps Injury Prevention for Hospital Workers. S. 455-461.***

**Objectives.** The purpose of this study was to collect data on self-reported sharps injuries to develop best practices to reduce them. **Methods.** Data on sharps injuries were collected for the period of January–October 2008 using Adverse Event Notification Forms already in use at Sema Hospital. **Results.** On average, 0.2% of all self-reported injuries were sharps injuries averaging one injury per month. Housekeeping Staff sustained 64% of such injuries, nurses sustained 36% (5 incidents). Outpatient clinics experienced the most injuries at 28% , followed by the Internal Diseases Inpatient Unit with 21% and the Medical Waste Room with 14% . Injuries often occurred during contact with medical waste bags (28%) and while replacing full sharp-boxes (14%). **Conclusion.** In summary, reducing needle stick injuries is an important component of the occupational and patient safety program at Sema Hospital. The research described in this study allowed the hospital to provide targeted interventions to increase awareness of the risks of needle stick injuries and reduce such injuries. The steps used in the study can be used in any health care organization in the world to design a customized improvement plan to reduce risk and injury.